

### **ABSTRACT**

A current compensation circuit for use with a current mirror circuit is disclosed. The current mirror circuit has a current path defined by a first programmable current mirror stage driving a first fanout current mirror stage. The first programmable current mirror stage includes at least one transistor with a channel length exhibiting a first channel length modulation factor  $\lambda_1$ . The first fanout current mirror stage connects to a supply voltage source. The current compensation circuit comprises a supply voltage current mirror coupled to the supply voltage source and has a current output coupled to the current path. The compensation circuit further includes a second programmable current mirror coupled in series to the supply voltage current mirror and including at least one transistor with a channel length exhibiting a channel length modulation factor  $\lambda_2$ . The second channel length modulation factor  $\lambda_2$  is larger than the first channel length modulation factor  $\lambda_1$ . As a result, the first programmable current mirror and the second programmable current mirror cooperate to maintain a bias current through the first fanout current mirror stage substantially independent of changes in the supply voltage.